

## **ABSTRACT OF THE DISCLOSURE**

A packet transfer apparatus for a network system is disclosed. The apparatus comprises a packet receiver that accepts an input of packets from a first network segment, a packet classifier that classifies packets based on their respective process flows, a packet discarder to discard packets and a packet sender that sends packets to a second network segment. Another aspect of the invention is a network system comprising a plurality of terminal nodes, at least one packet transfer unit effectively connected between at least two of said terminal nodes, said at least one transfer unit further comprising a packet classifier that classifies packets into their respective process flows. Yet another aspect of the invention is a method of transferring packets in a network comprising accepting an input of packets from a first network segment, classifying the packets based on their process flows, providing a unique process flow identification to packets belonging to a same process flow, discarding at least a packet, providing information to a packet classifier regarding the discarded packets, and stopping further transfer of packets having a same PFID as the discarded packet.